IEI Technology Corp.

MODEL:

LKM Series

15" LCD Monitor/Keyboard/Mouse Console Drawer

1U High with Speaker and Optional 8-Port Switch

User Manual

Rev. 1.0 November 2006

RoHS Lead Free

REVISION HISTORY

Title	LKM Series Console Drawer User Manual	
Revision Number	Description	Date of Issue
1.0	Initial release	November 2006

ABOUT THIS MANUAL

This document covers the description and installation instructions for the LKM Series console drawers.

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SAFETY PRECAUTIONS

- Prior to installing, moving, and modifying the console, make sure the power is turned off and the power cord is disconnected.
- Do not apply voltage levels that exceed the specified voltage range. Doing so will cause fire or an electrical shock.
- Electric shocks can occur if the console chassis is opened. Do not drop or insert any objects into the ventilation openings of the console.
- If considerable amounts of dust, water, or fluids entered the console, turn off the power supply immediately, unplug the power cord, and contact the console vendor.
- Explosions may occur with installations in environments where flammable gases are present.

FURTHER PRECAUTIONS

- Do not drop the console against a hard surface.
- Do not strike or exert excessive force onto the LCD panel.
- Touching the LCD panel using a sharp object will damage it.
- Avoid environments exposed to direct sunlight, dust, or chemical vapors.
- The ambient temperature of the installation site should be observed and controlled to avoid overheating the console.
- Condensation might form inside the console chassis if exposed to sudden changes in temperature.
- Carefully route the power cord so that people cannot step on it. Do not place anything over the power cord.
- If the console should be left unused for an extended period of time, disconnect it from its power source to avoid damage by transient over-voltage.
- If any of the following situations arise, have the console checked by qualified service personnel:
    - The power cord or plug is damaged.
    - Liquid has penetrated into the console.

- The console has been exposed to moisture.
- The console does not work properly, or cannot be made to work according to the user manual.
- The console has been dropped and damaged.
- The console shows obvious signs of damage.

WARNING!

Any changes or modifications made to the console that are not expressly approved by the relevant standards could void the authority to operate the console.

ADDITIONAL INFORMATION AND ASSISTANCE

MAINTENANCE AND CLEANING

Prior to cleaning any part or component of the console, please read the details below.

- Except for the LCD panel, never spray or squirt liquids directly onto any other components. To clean the LCD panel, gently wipe it with a piece of soft dry cloth or a slightly moistened cloth.
- The interior of the console does not require cleaning. Keep fluids away from the console interior.
- Be cautious of all small removable components when vacuuming the console.
- Turn the system off before cleaning the console.
- Never drop any objects or liquids through the openings of the console.
- Be cautious of any possible allergic reactions to solvents or chemicals used when cleaning the console.
- Avoid eating, drinking and smoking within vicinity of the console.

CLEANING TOOLS

Some components in the console may only be cleaned using a product specifically designed for the purpose. In such case, the product will be explicitly mentioned in the cleaning tips. Below is a list of items to use when cleaning the console.

- ***Cloth*** – Although paper towels or tissues can be used, a soft, clean piece of cloth is recommended when cleaning the console.
- ***Water or rubbing alcohol*** – A cloth moistened with water or rubbing alcohol can be used to clean the console.
- ***Using solvents*** – The use of solvents is not recommended when cleaning the console as they may damage the plastic parts.
- ***Vacuum cleaner*** – Using a vacuum specifically designed for computers is one of the best methods of cleaning the console. Dust and dirt can restrict the airflow in the console and cause its circuitry to corrode.
- ***Cotton swabs*** - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas.
- ***Foam swabs*** - Whenever possible, it is best to use lint free swabs such as foam swabs for cleaning.

ESD PRECAUTIONS

Observe all conventional anti-ESD methods while handling the components contained within the console should the need arise. The use of a grounded wrist strap and an anti-static work pad is recommended. Avoid dust and debris or other static-accumulating materials in the work area.

CONVENTIONS USED IN THIS MANUAL

WARNING!

Warnings appear where overlooked details may cause damage to the equipment or result in personal injury. Warnings should be taken seriously. Warnings are easy to recognize. The word “warning” is written as “**WARNING**,” both capitalized and bold and is followed by text in italics. The italicized text is the warning message.

CAUTION!

Cautionary messages should also be heeded to helps reduce the chance of losing data or damaging the system. Cautions are easy to recognize. The word “caution” is written as “**CAUTION**,” both capitalized and bold and is followed by text in italics. The italicized text is the cautionary message.

NOTE:

These messages inform the reader of essential but non-critical information. These messages should be read carefully as any directions or instructions contained therein can help avoid making mistakes. Notes are easy to recognize. The word “note” is written as “**NOTE**,” both capitalized and bold and is followed by text in italics. The italicized text is the cautionary message.

Lists

Bulleted Lists: Bulleted lists are statements of non-sequential facts that can be read in any order. Each statement is preceded by a round black dot “•” or bullets in other shapes.

Numbered Lists: Numbered lists describe sequential steps that should be followed in order.

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Chapter

1

Introduction

1.1 LKM Series Console Drawer Overview

The LKM Series console drawer is designed for IT professionals with up to eight ports for leveraging the power of existing server networks with minimal intrusion. Highly efficient, the LKM Series console drawer allows centralized access and control of up to eight computers from an integrated 1U console with a built-in 15” LCD display, one or eight port KVMA switch, keyboard and touch pad.

The LKM Series console drawer is designed to deliver considerable return on investment. Saving time, money and valuable server room real estate, it can be rack mounted at any user-height. With a host of advanced features designed to protect your investment, the series includes: intelligent OSD (On Screen Display) menus, hot key switching, auto-sensing of computers and multi-language support.

Whether it’s in educational, government, or corporate sectors, the LKM Series console drawer provides network and IT managers a stable management tool for multiple computer access and control.

1.2 LKM Series Console Drawer Features

Some of the features of the LKM Series console drawer include:

- Ability to connect up to 8 computers
- Keyboard, mouse, audio and VGA connection ports for each computer
- 15" high brightness TFT LCD display
- Standard (PS/2) keyboard and touch pad
- Keyboard languages supported: German, English, French, Italian, Japanese, Russian, Spanish and Traditional Chinese
- Two internal speakers for stereo audio output
- 1U high slim body design saves rack space
- LCD module (LCM) - channel change control, auto scan control, programmable station naming
- Hot Pluggable - add or remove computers without having to power down the switch
- Supported OSes: Windows 98SE, 2000, XP, ME, Linux and Unix

1.3 LKM Series Console Drawer Benefits

Some of the benefits of the LKM Series console drawer include:

- Control and access multiple computers from a central user console instead of moving from one to another.
- Save hundreds of dollars in equipment, space, and power costs as there is no need for additional peripherals for each computer.
- Installation is as simple as connecting cables between the KVMA switch and computers.
- Ideal for an Internet data center, server room, testing lab, and network-operating center where multiple computers are required.

1.4 Model Variations

The LKM Series console drawer comes in a variety of models. The models have special features as identified by their model name. The LKM Series console drawer model variations are listed in **Table 1-1**.

	LKM-926(8)G(C)-(L)	LKM-926(8)G(C)T-(L)	LKM-926(8)G(C)C-(L)	LKM-935(8)G(C)-(L)	LKM-935(8)G(C)T-(L)	LKM-935(8)G(C)C-(L)
LCD Size	**15”**	**15”**	**15”**	**15”**	**15”**	**15”**
Keyboard	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Mouse	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Speaker	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Drawer Size	**1U**	**1U**	**1U**	**1U**	**1U**	**1U**
Power Input	**AC**	**48VDC**	**24VDC**	**AC**	**48VDC**	**24VDC**
Separate LCD and Keyboard Accessibility	**No**	**No**	**No**	**Yes**	**Yes**	**Yes**

Table 1-1: LKM Series Console Drawer Model Variations

1.5 Model Options

Table 1-1 lists the standard features for the LKM Series console drawer model variations. However, there are a variety of additional options available for the LKM Series console drawer as identified by specific product codes. The product code options for the LKM Series console drawer are:

- (8) – specifies an eight port KVMA switch; these models also include an LCD module (LCM) on the keyboard tray.
- (C) – specifies color
  - B: black
  - W: white
- (L) – specifies keyboard language
  - DE: German
  - EN: English
  - FR: French
  - IT: Italian
  - JP: Japanese
  - RU: Russian
  - SP: Spanish
  - TW: Traditional Chinese

For example, **LKM-9268GB-EN** would indicate an LKM-926 model with an eight-port KVMA switch, black color with an English keyboard.

1.6 Mechanical Overview

This section describes a general physical overview of the LKM series console drawers.

1.6.1 LKM-926 Series Overview

The LKM-926 series console drawer consists of a rail-mounted TFT LCD and keyboard tray within a heavy-duty steel drawer. With the use of a mounting kit, the console drawer can easily be mounted to a standard 19” rack. Figure 1-1 shows an overview of the LKM-926 series console drawer.

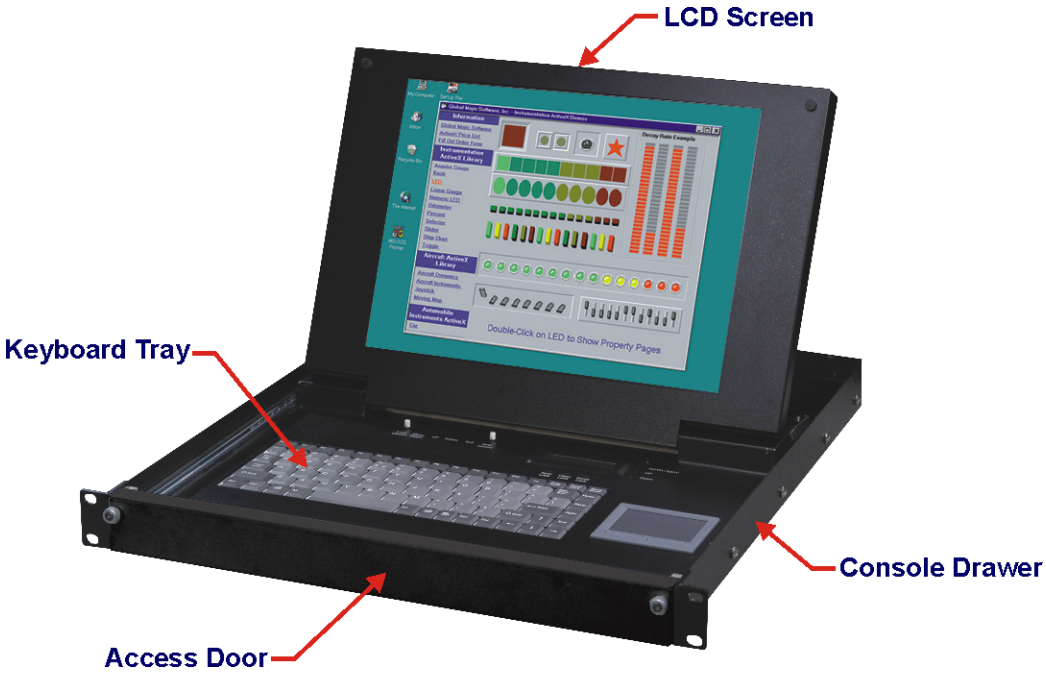

Figure 1-1: LKM-926 General Overview

1.6.2 LKM-926 Keyboard Tray

The keyboard tray consists of the following items:

- 87-key keyboard
- Left and right speakers
- LCD ON/OFF button
- Speaker ON/OFF button
- OSD control buttons
- Keyboard lock LEDs
- Touchpad with left and right-click buttons
- LCM display and control buttons (KVMA 8-port models only)

Figure 1-2 shows the LKM-926 series console drawer keyboard tray.

Figure 1-2: LKM-926 Keyboard Tray

1.6.3 LKM-926 Side View

The sides of the console drawer have holes for rack mounting. Refer to **Section 3.5** for complete mounting details. **Figure 1-3** shows the side view of the LKM-926 series console drawer.

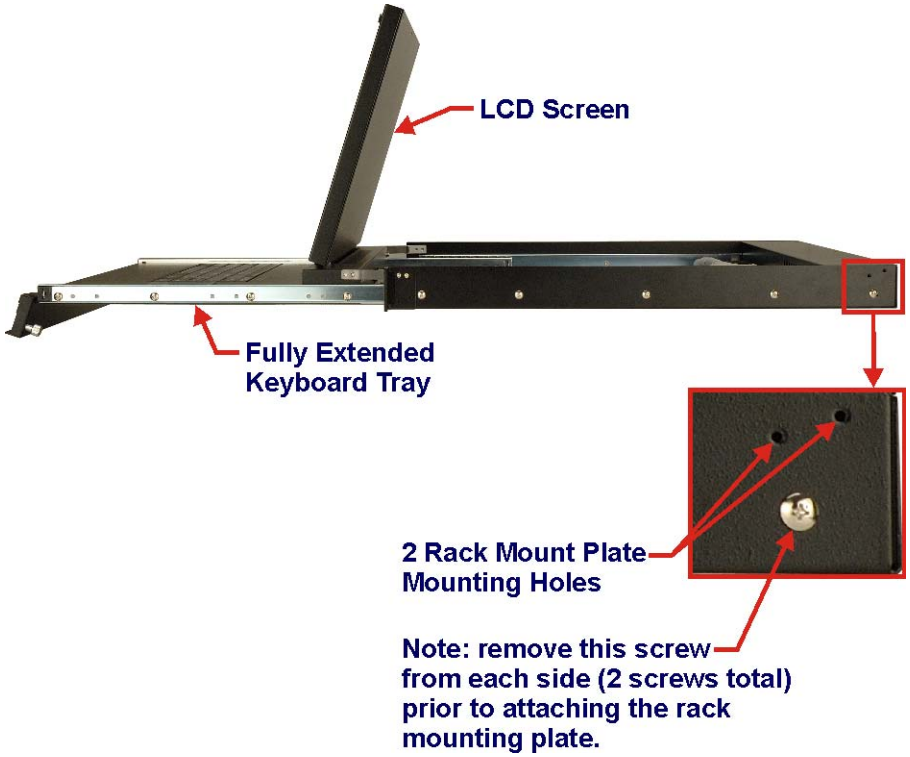

Figure 1-3: LKM-926 Side View

1.6.4 LKM-926 Access Door

The front of the console drawer consists of an access door with two spring-loaded, freewheeling retention screws for securing the access door when the LCD and keyboard are in the stowed position. Also located on the front of the console drawer are two metal clips with slotted holes for rack mounting. Refer to **Section 3.5** for complete mounting details. Figure 1-4 shows the access door of the LKM-926 series console drawer.

Figure 1-4: LKM-926 Access Door

1.6.5 LKM-926 Rear View

The rear panel of the drawer consists of industry standard VGA, keyboard, mouse and audio connectors, as well as a power connector and cooling vents. Figure 1-5 shows the rear view of the LKM-926 series console drawer.

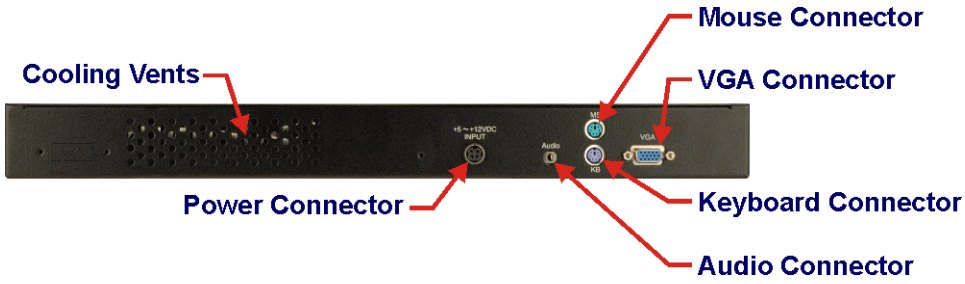

Figure 1-5: LKM-926 Rear View

1.6.6 LKM-935 Series Overview

The LKM-935 series console drawer is similar to the LKM-926 series with the following notable exceptions:

- The access door and LCD screen each have an additional handle for easy access.
- The LCD screen and keyboard tray can move independently of one another so that the LCD screen can be viewed while the keyboard tray is in the stowed position. Note that the keyboard tray cannot be accessed independently of the LCD screen.
- The sides of the drawer each have four holes for rack mounting (for a total of eight holes, not including those found on the front of the drawer). Refer to **Section 3.5** for complete mounting details.

Figure 1-6 shows the side view of the LKM-935 series console drawer.

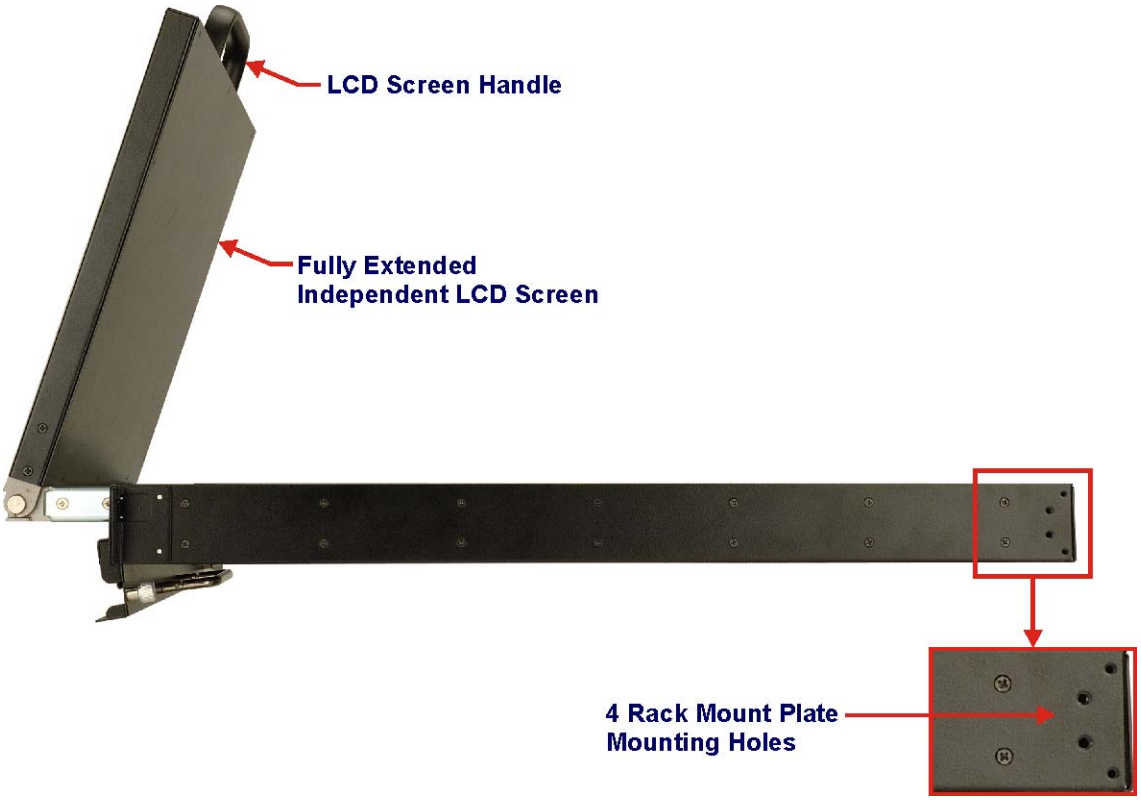

Figure 1-6: LKM-935 Series Overview

1.6.7 KVMA 8-Port Switch

The KVMA 8-port switch can be used to connect up to eight systems to the LKM series console drawer. Each system can be connected to the console via its own standard audio, VGA, keyboard and mouse connectors. Each system can be easily accessed through the LCM on the keyboard tray (see Figure 1-2). Figure 1-7 shows the KVMA 8-port switch.

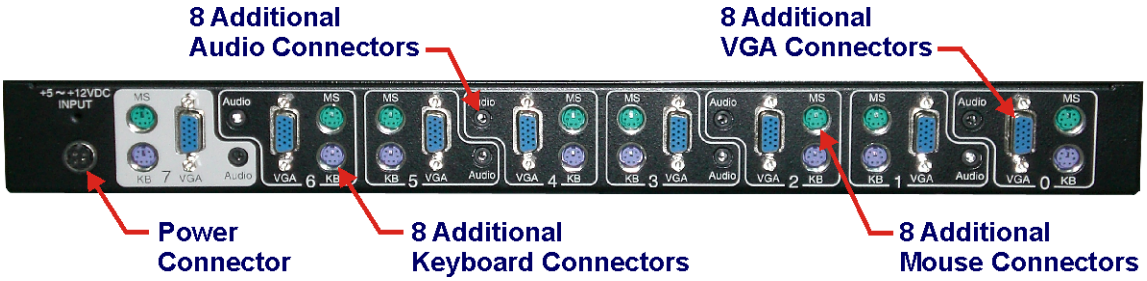

Figure 1-7: KVMA 8-Port Switch

1.7 Certifications

All LKM series console drawer models comply with the following international standard:

- RoHS

For a more detailed description of this standard, please refer to **Appendix A**.

1.8 Maintenance and Troubleshooting

All LKM series console drawer models require no maintenance and should provide trouble-free service. If any component of an LKM series console drawer fails to operate, malfunctions, or otherwise appears to be broken, do not attempt to fix it. Return the malfunctioning LKM series console drawer in its entirety to the original reseller, vendor or to IEI for repair or replacement.

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Chapter

2

Detailed Specifications

2.1 Series Specifications

Table 2-1 shows the LKM Series console drawer specifications.

LCD Type	**15" TFT**
Input Interface	**XGA**
Max. Resolution	**1024x768**
Backlight MTBF	**50,000 Hrs**
Contrast	**400:1**
LCD Color	**262K**
Brightness (cd/m2)	**350**
Power Adapter	**42W AC/DC Adapter**
Chassis	**Heavy-duty steel**
View Angle (H / V)	**60(left), 60(right), 40(up), 60(down)**
OSD function	**Yes**
Mounting	**19" Rack Mount**
Rack Height	**1U**
Keyboard	**87 Keys – Slim Size**
Touch Pad	**Yes – with 2 buttons**
LCM	**8 Port KVMA Models Only**
Independent KB/LCD Trays	**LKM-926 series = No, LKM-935 series = Yes**
Dimensions (WxHxD) (mm)	**LKM-926 series = 482 x 323.25 x 903.29** **LKM-935 series = 482 x 366.5 x 942.08**
Weight (Gross/Net)	**17Kg / 11.08Kg**
Color	**Black (Pantone Black C), White (Pantone 413C)**
Vibration	**5 ~ 17 Hz, 0.1" double amplitude displacement** **17 ~ 640 Hz, 1.5G acceleration peak to peak**
Shock	**10G acceleration peak to peak (11ms)**
Humidity	**5 ~ 95%, non-condensing**
Operation Temperature	**0~50°C**

Table 2-1: LKM Series Specifications

2.2 Physical Dimensions

The following sections describe the physical dimensions for each model of the LKM Series console drawer.

2.2.1 General Physical Dimensions

General physical dimensions for the LKM Series console drawers are shown in **Table 2-2**.

Model	Width (mm)	Height (mm)	Depth (mm)
LKM-926	482	323.25	903.29
LKM-935	482	366.5	942.08

Table 2-2: General Physical Dimensions

2.2.2 LKM-926 Physical Dimensions

The physical dimensions of the LKM-926 are shown in **Figure 2-1**.

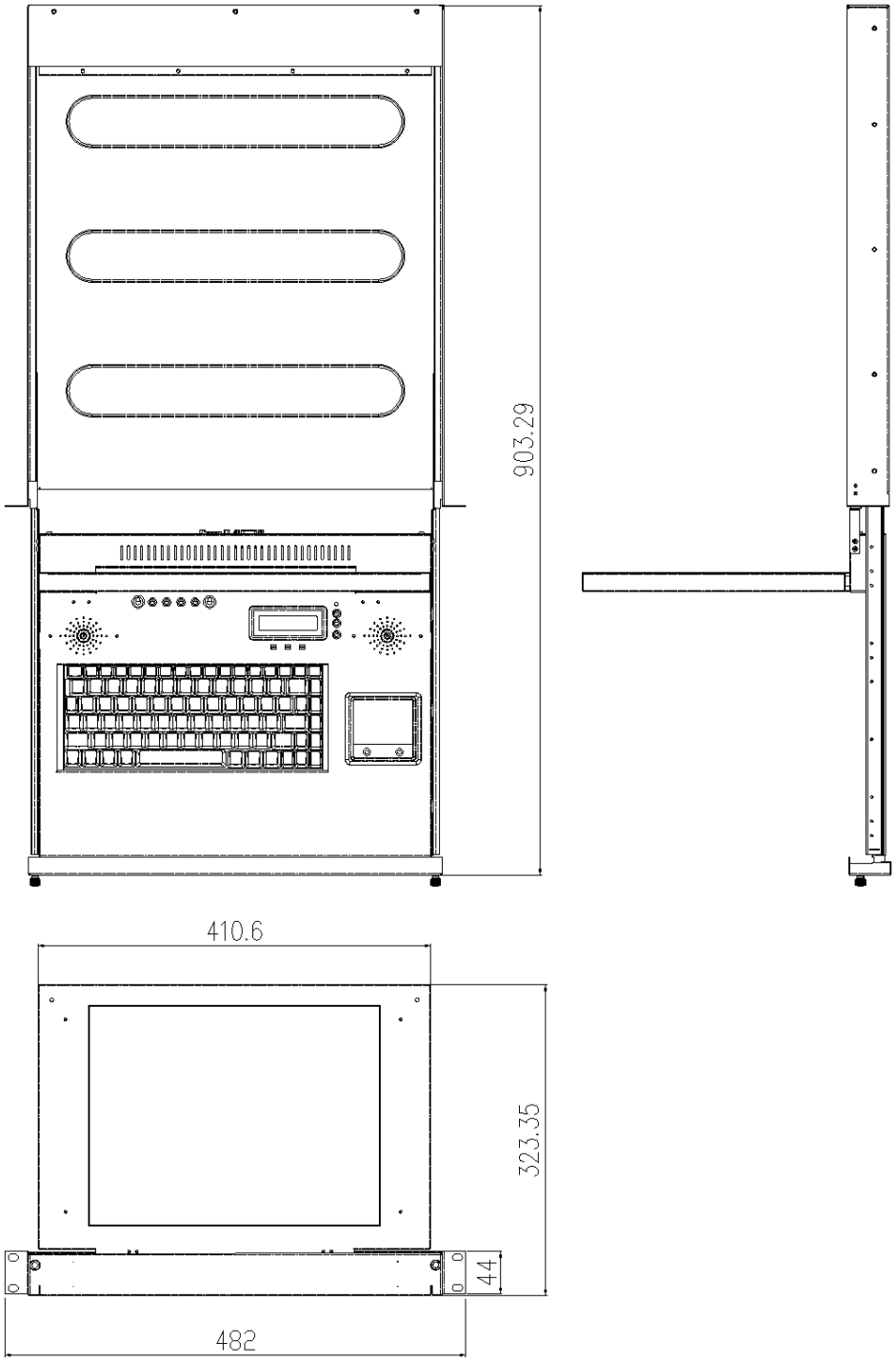

Figure 2-1: LKM-926 Physical Dimensions (millimeters)

2.2.3 LKM-935 Physical Dimensions

The physical dimensions of the LKM-935 are shown in Figure 2-2.

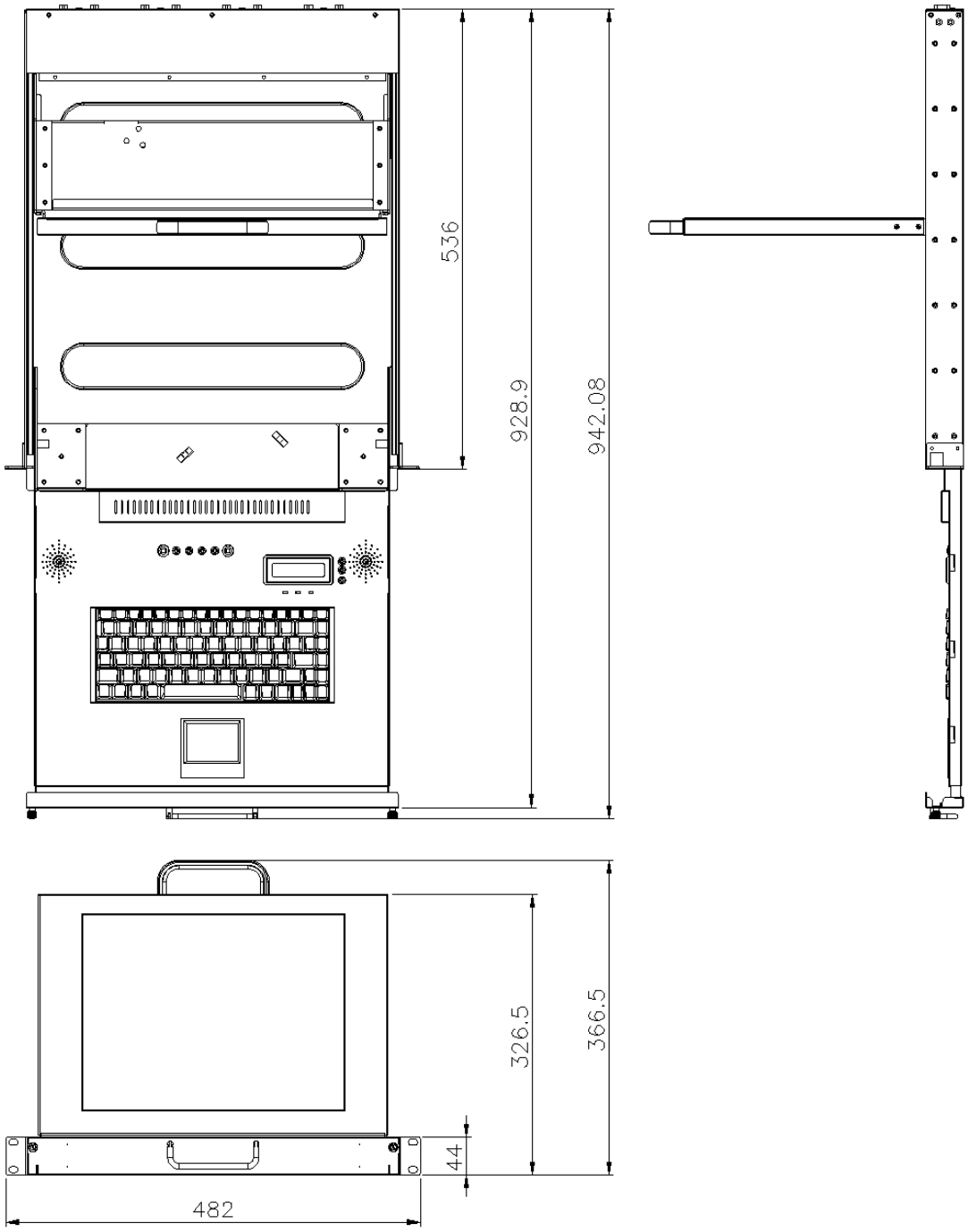

Figure 2-2: LKM-935 Physical Dimensions (millimeters)

2.3 LCD Specifications

Table 2-3 lists the LKM Series console drawer LCD specifications.

Size	**15"**
Mfr./Model	**AUO/G150XG01**
Resolution (pixel)	**XGA (1024 x 768)**
Active Area (mm)	**304.1 x 228.1**
Pixel Pitch (mm)	**0.297**
Mode	**TN**
Number of Colors	**262K**
Color Saturation (NTSC%)	**60**
View Angle (H/V)	**60(left), 60(right), 40(up), 60(down)**
Brightness (cd/m²)	**350**
Contrast Ratio	**400 : 1**
Response Time (ms) (at 25°C)	**16ms (Tr+Tf)**
Power Consumption (W)	**11.5**
Interface	**1ch LVDS**
Supply Voltage (V)	**3.3**
Backlight	**2 CCFL**
Outline Dimensions (mm)	**326.5 x 253.5 x 12.0**
Lamp Life (hrs)	**50,000**

Table 2-3: LKM Series console drawer LCD Specifications

2.4 Power Adapters

2.4.1 5V/12V AC/DC Power Adapter

Table 2-4 lists the 5V/12V AC/DC power adapter specifications.

MFR./Model	**Sinpro/SPU45E-201**
Power	**45 Watt AC/DC Adapter**
General Description	**Universal Input 90 to 264 VAC** **EMI Meets FCC Part-15/CISPR 22 Class B** **MTBF 100Khrs**
Input Voltage Range	**90-264VAC**
Input Frequency	**47-63 Hz**
Inrush Current	**30A max. (Cold Start)**
Hold-up Time	**10mS typical**
Leakage Current	**0.75mA max.**
Short Circuit Protection	**Continuous**
Over-voltage Protection	**Yes**
Continuous Output Power	**42W max.**
Hi-pot Isolation: Input / Output	**42/42VDC**

Table 2-4: 5V/12V AC/DC Power Adapter Specifications

The 5V/12V AC/DC power adapter is shown in Figure 2-3.

Figure 2-3: 5V/12V AC/DC Power Adapter

The physical dimensions of the 5V/12V AC/DC power adapter are shown in **Figure 2-4**.

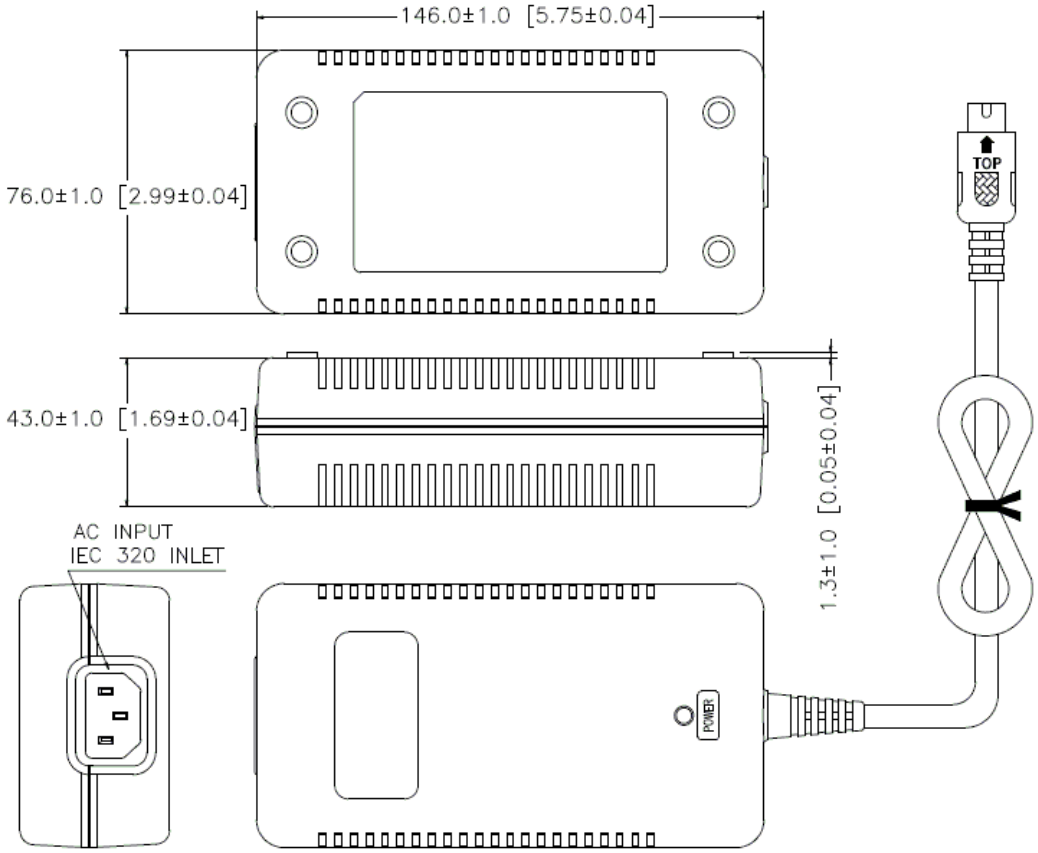

Figure 2-4: 5V/12V AC/DC Power Adapter Dimensions (millimeters [inches])

2.4.2 24V/48V DC Input Power Adapters

Table 2-5 lists the 24V/48V DC power adapter specifications.

	24V DC Input	48V DC Input
MFR./Model	Skynet / ACE-023C	Skynet / ACE-023T
EMI Standards	FCC Docket 20780 curve "B" EN 55022 "B"	
EMS Standards	IEC-61000-4-2: 4KV contact; 8KV air discharge criterion B IEC-61000-4-3: 3V/M with 80% AM criterion A IEC-61000-4-4: 2KV criterion B	
Input Voltage Range	18VDC - 32VDC	36VDC - 72VDC
Input Current	2.5A max. at 24VDC	
Inrush Current	15A max. at 24VDC (25º Cold Start)	
Output Load Range	+5V output, 4A rated load +12V output, 0.75A rated load	
Output Power	>30W at 24VDC	
Ripple and Noise	>1.2% of output voltage peak to peak	
Line Regulation	>±1% at rated load	
Load Regulation	5V >±5% at 60% rated load, 24VDC input 12V >±4% at 60% rated load, 24VDC input	
Short Circuit Protection	Continuous	
Over-voltage Protection	Yes	
Humidity	20 ~ 95%, non-condensing	
Operation Temperature	0 ~ 50°C	
Storage Temperature	-40 ~ 85°C	

Table 2-5: 24V/48V DC Power Adapter Specifications

The physical dimensions of the 24V/48V DC power adapter are shown in Figure 2-5.

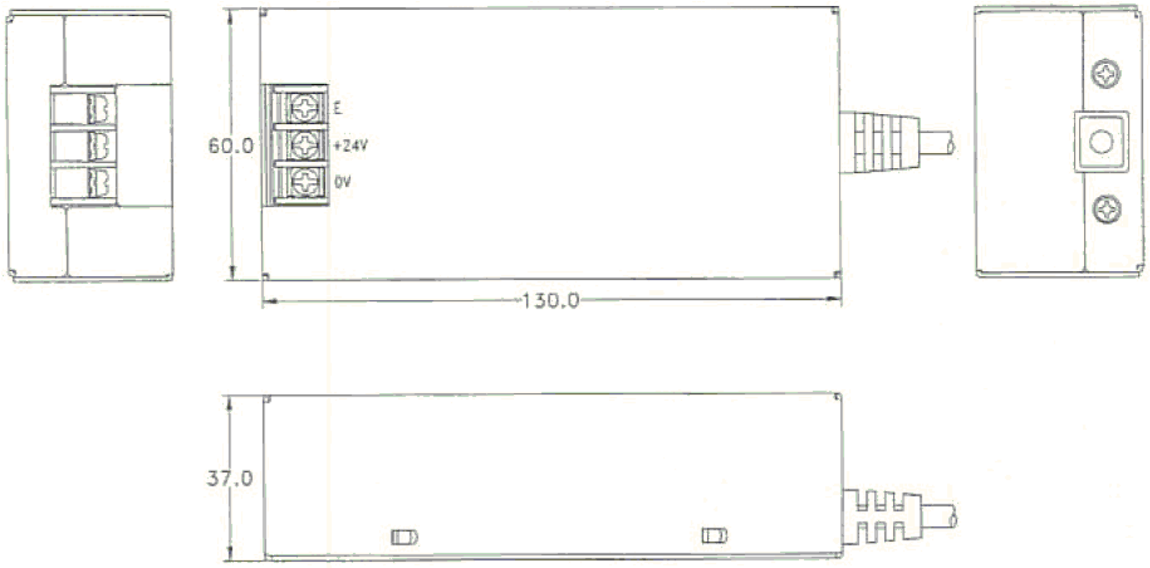

Figure 2-5: 24V/48V DC Power Adapter Dimensions (millimeters)

Chapter

3

Installation

3.1 Installation Precautions

When installing the LKM series console drawer, please follow the precautions listed below:

- **Read the user manual**: The user manual provides a complete description of the LKM series console drawer, installation instructions and configuration options.
- **DANGER! Disconnect Power**: Power to the console drawer must be disconnected when installing the LKM series console drawer.
- **Qualified Personnel**: The LKM series console drawer must be installed and operated only by trained and qualified personnel. Maintenance may only be carried out by qualified personnel who are familiar with the associated dangers.
- **Mounting**: Since the LKM series console drawer may weigh up to 11Kg, please ensure at least two people assist with mounting the drawer.
- **Air Circulation**: Make sure there is sufficient air circulation when installing the LKM series console drawer. The LKM series console drawer's cooling vents must not be obstructed by any objects. Blocking the vents can cause overheating of the LKM series console drawer.
- **Grounding**: The LKM series console drawer should be properly grounded. The voltage feeds must not be overloaded. Adjust the cabling and provide external overcharge protection per the electrical values indicated on the label attached to the power adapter.

3.2 Unpacking

3.2.1 Packaging

When shipped, the LKM series console drawer is wrapped in a plastic bag. Two polystyrene ends are placed on either side of the console drawer. The console drawer is then placed into a first (internal) cardboard box. This box is then sealed and placed into a second (external) cardboard box. The second box is also sealed. Two bags containing accessory items are placed with the console drawer in the internal (first) box.

3.2.2 Unpacking Procedure

To unpack the LKM series console drawer, follow the steps below:

WARNING:

The LCD screen has a protective plastic cover stuck to the screen. Remove the plastic cover only after the LKM series console drawer has been properly installed. This ensures the screen is protected during the installation process.

Step 1: Use a box cutter, a knife or a sharp pair of scissors to cut the tape that seals the top side of the external (second) box.

Step 2: Open the external (second) box.

Step 3: Use a box cutter, a knife or a sharp pair of scissors to cut the tape that seals the top side of the internal (first) box.

Step 4: Lift the console drawer out of the boxes.

Step 5: Remove both polystyrene ends, one from each side.

Step 6: Pull the plastic cover off the console drawer.

Step 7: Make sure all the components listed in the packing list are present.

3.2.3 Packing List

All the console drawers in the LKM series are shipped with the following components:

- 1 x LKM series console drawer
- 1 x AC Power cable
- 1 x Power Adapter
- 2 x Rack mounting brackets
- 2 x Rack angle mounting brackets
- 1 x 1.8M cable set (VGA, keyboard, mouse and audio)
  for single port model only
- 1 x Screw set
- 1 x User Manual

If any of these items is missing or damaged, contact the distributor or sales representative immediately.

3.2.4 Optional Accessories

The following optional accessories for the LKM series console drawers can be ordered separately:

- LKM-CB18A-RS: 1.8M cable set (VGA, keyboard, mouse and audio cables)
- LKM-CB30A-RS: 3.0M cable set (VGA, keyboard, mouse and audio cables)
- LKM-CB50A-RS: 5.0M cable set (VGA, keyboard, mouse and audio cables)

3.3 Pre-installation Preparation

3.3.1 Tools

Before installing the LKM series console drawer, make sure the following tools are on hand:

- **Philips (crosshead) screwdriver**: All the retention screws on the system are Philips screws.

3.4 Connectors

Table 3-1 lists the rear panel connectors for the LKM series console drawers.

Connector	Type
Audio connector	1 x audio jack
Keyboard connector	PS/2 connector
Mouse connector	PS/2 connector
Power connector	Mini DIN Plug With Lock (Thick Pin, 4 PIN) connector
VGA connector	HD-D-sub 15 female connector

Table 3-1: Rear Panel Connectors

3.4.1 Audio Connector

To receive audio signals from a system, use the rear panel audio jack to connect to a system's line out audio jack connector.

3.4.2 Keyboard Connector

Use the rear panel PS/2 keyboard connector to connect the console keyboard to a system.

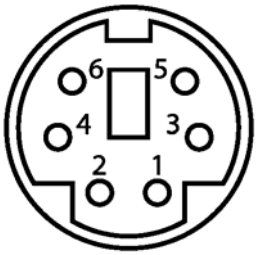

Figure 3-1: Keyboard Connector

PIN	DESCRIPTION
1	L_KDAT
2	NC
3	GND
4	5V
5	L_KCLK
6	NC

Table 3-2: Keyboard Connector Pinouts

3.4.3 Mouse Connector

Use the rear panel PS/2 mouse connector to connect the console mouse to a system.

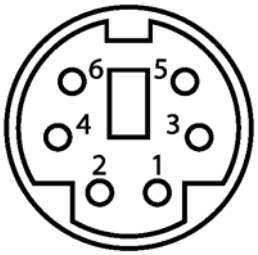

Figure 3-2: Mouse Connector

PIN	DESCRIPTION
1	L_MDAT
2	NC
3	GND
4	5V
5	L_MCLK
6	NC

Table 3-3: Mouse Connector Pinouts

3.4.4 Power Connector

Use the rear panel power connector to connect the console to the power adapter.

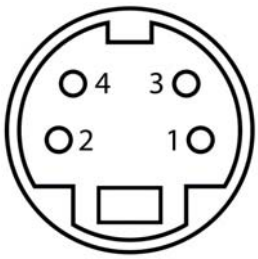

Figure 3-3: 5V/12V Power Connector

PIN	DESCRIPTION	PIN	DESCRIPTION
2	COMMON	1	+5V
4	COMMON	3	+12V
Shell	GND		

Table 3-4: 5V/12V Power Connector Pinouts

3.4.5 VGA Connector

Use the rear panel standard 15-pin female VGA connector to connect the monitor to the system graphics interface.

PIN	DESCRIPTION	PIN	DESCRIPTION	PIN	DESCRIPTION
1	RED	6	GROUND	11	NC
2	GREEN	7	GROUND	12	DDCDAT
3	BLUE	8	GROUND	13	HSYNC
4	NC	9	NC	14	VSYNC
5	GROUND	10	GROUND	15	DDCCLK

Table 3-5: VGA Connector Pinouts

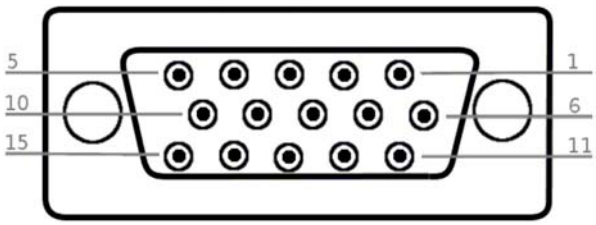

Figure 3-4: VGA Connector

3.5 Mounting the LKM Series Console Drawer

Each LKM series console drawer is shipped with an installation kit for mounting the drawer into a rack. Refer to the following section for instructions on rack mounting the LKM series console drawer.

3.5.1 Rack Mounting

The LKM series console drawer can be mounted to the rack posts of a standard 19” rack cabinet. Make sure that all cabling is correctly attached and carefully routed when installing the LKM series console drawer. Follow the steps below to mount the LKM series console drawer into a rack.

NOTE:

At least two people are required to mount the LKM series console drawer. The rack or cabinet into which the LKM series console drawer is installed should provide adequate and sufficient ventilation, grounding, power source, and stability features.

Step 1: Find the rack mounting kit in the box that the LKM series console drawer was shipped in.

NOTE:

In order to attach a rack-mounting bracket to an LKM-926 series console drawer, the rearmost cap screw must be removed from the side panel. Refer to ***Figure 1-3*** *for more information.*

Step 2: Attach one of the rack mounting brackets to the side of the console drawer with either two or four screws as required (see **Figure 3-5**).

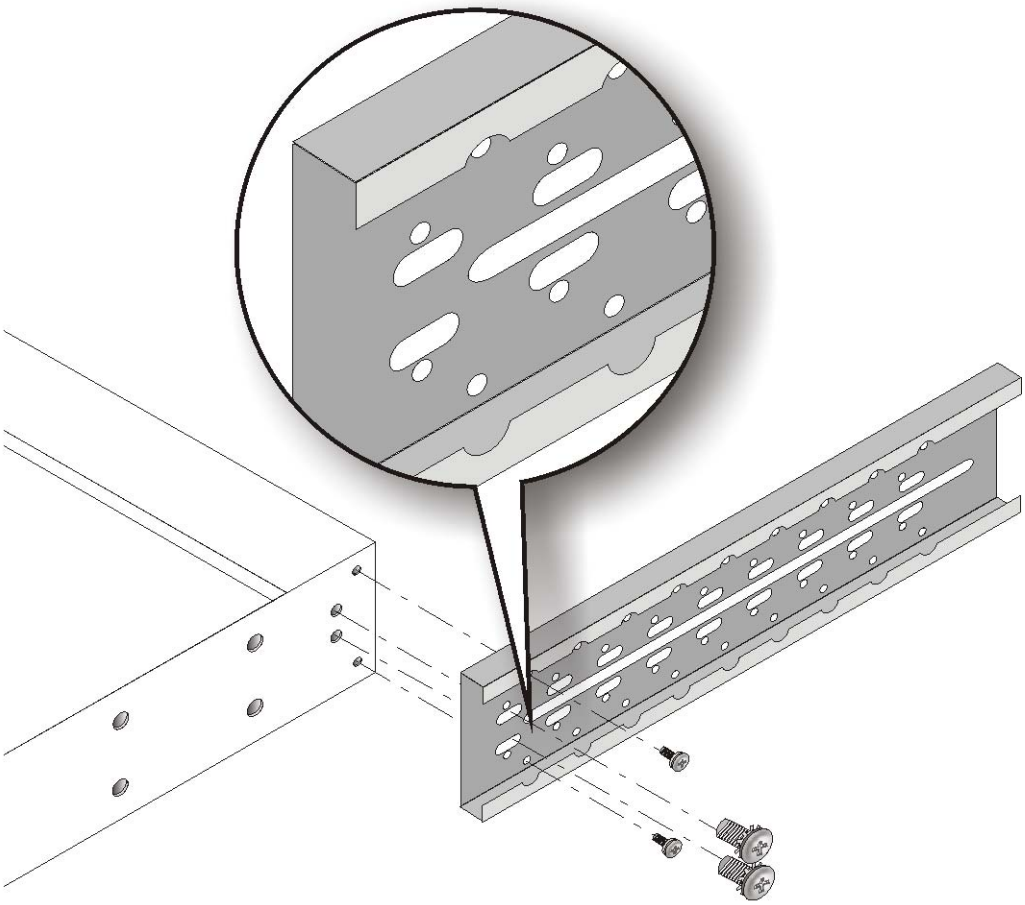

Figure 3-5: Attach the Rack Mounting Bracket

Step 3: Repeat **Step 2** for the other side of the console drawer.

Step 4: Attach an angle bracket to the one of the rack mounting brackets with two screws as shown in Figure 3-6.

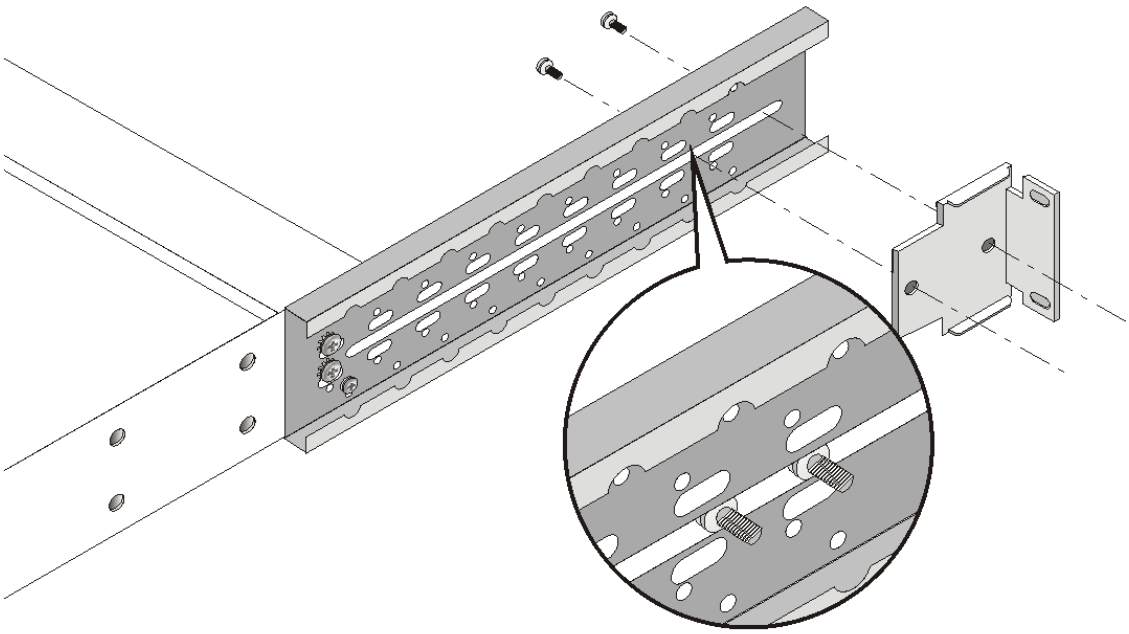

Figure 3-6: Attach the Angle Bracket

Step 5: Repeat **Step 4** for the other side of the console drawer.

Step 6: With the help of another person, insert the console drawer into a rack and align the slotted holes on the front face of the drawer with the holes in the rack.

Step 7: Insert four screws (two on each side of the drawer's front face) through the holes in the drawer's front face and into the rack as seen in Figure 3-7.

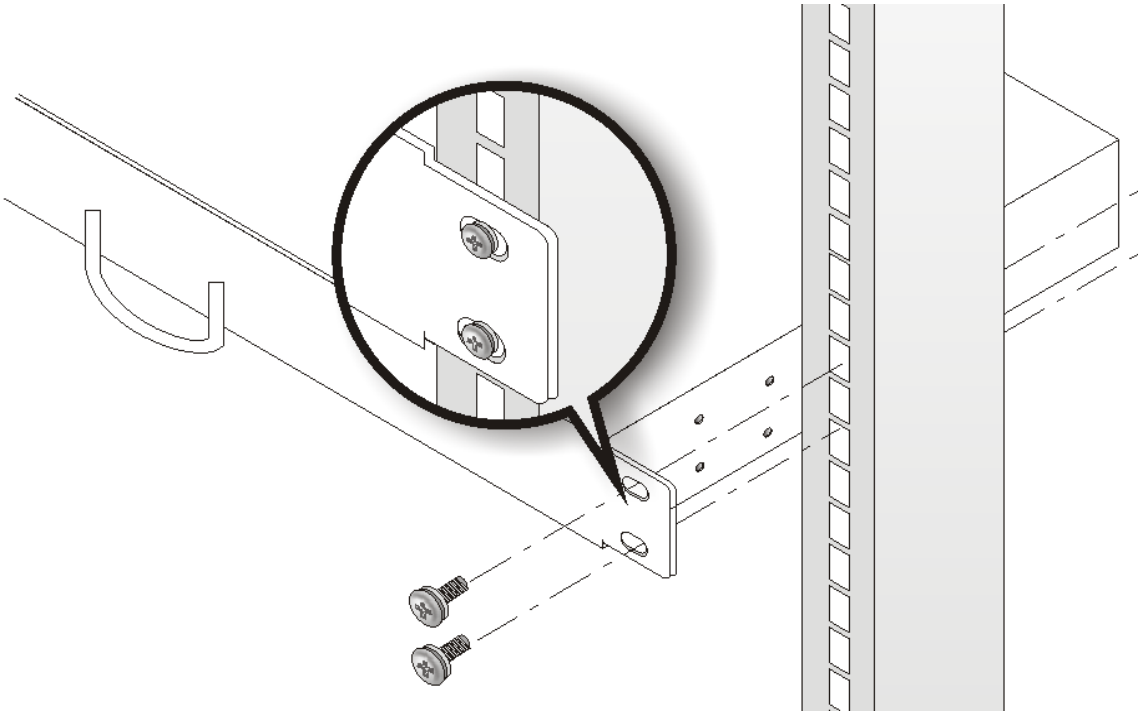

Figure 3-7: Secure Front of Console to Rack

Step 8: Insert four screws (two on each side of the drawer) through the holes in the angle mounting bracket and into the rack as seen in **Figure 3-8**.

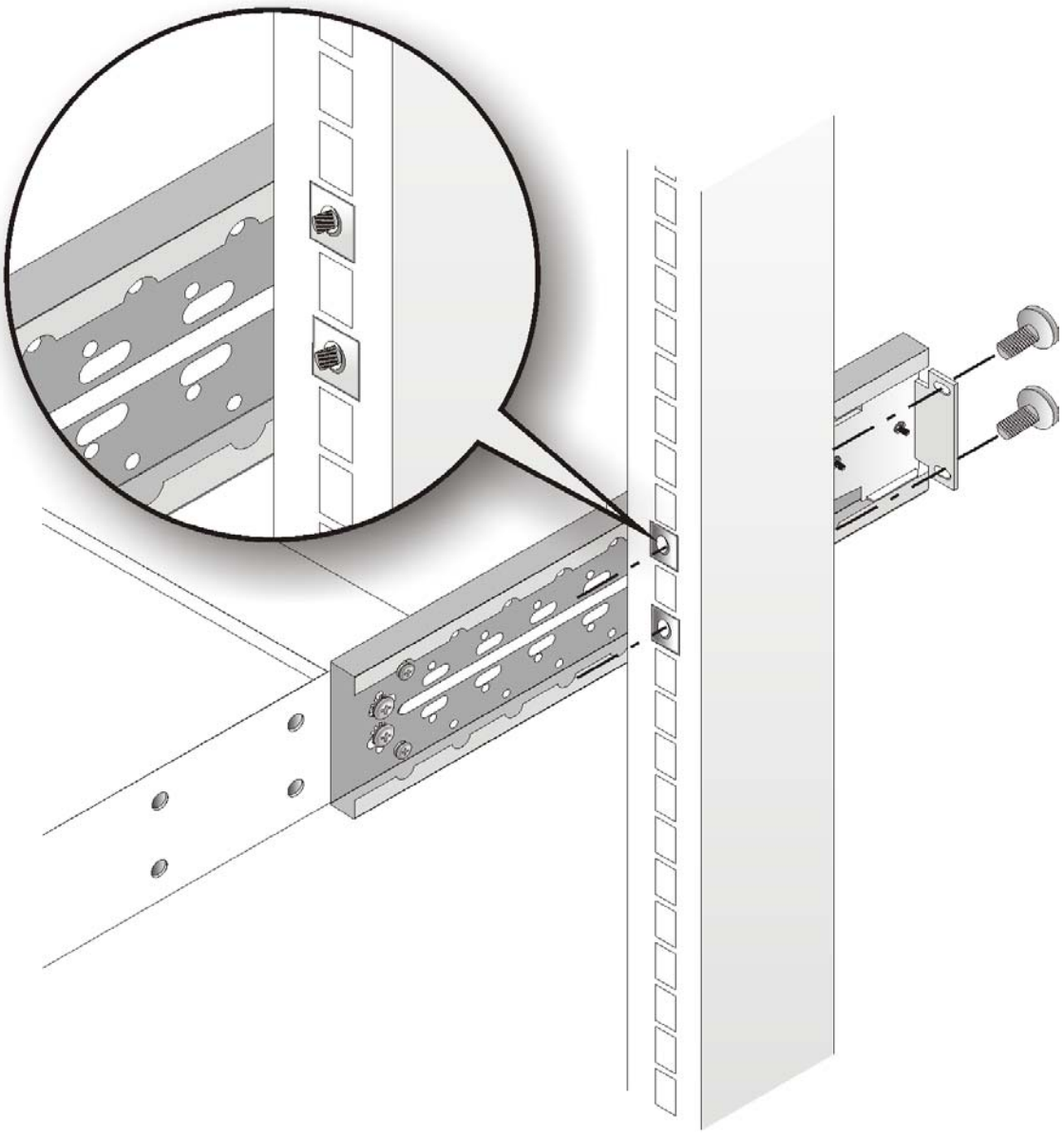

Figure 3-8: Secure Rear of Console to Rack

3.6 Cabling

Each LKM series console drawer is shipped with a set of cables for connecting a system to the console. **Figure 3-9** shows a detail of the cable connections on the LKM series console drawer rear panel. Up to eight systems can be connected to the console drawer with the use of a KVMA switch model. All cable connections to the KVMA switch are similar to those seen in **Figure 3-9**.

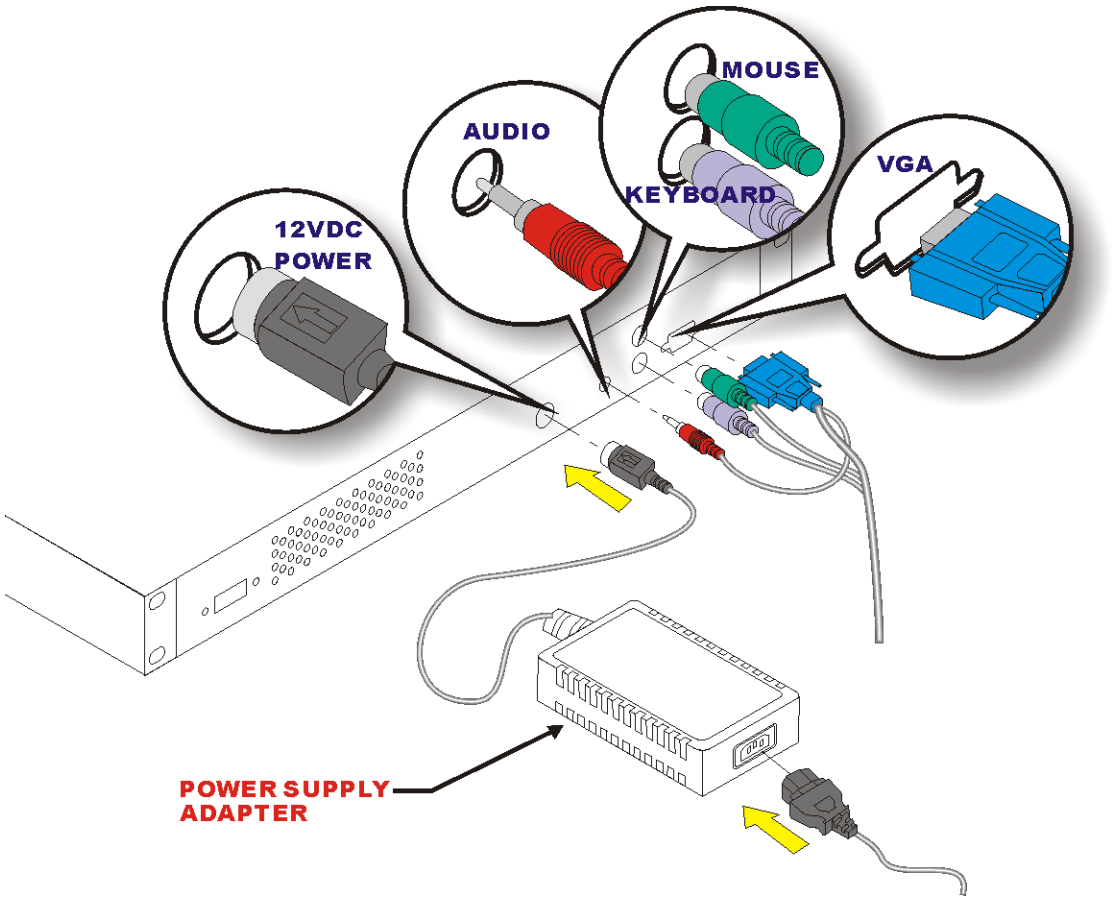

Figure 3-9: Rear Panel Connections

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Chapter

4

On-Screen-Display (OSD) and LCD Module (LCM) Controls

4.1 OSD Controls

4.1.1 OSD Buttons

There are several on-screen-display (OSD) control buttons on the keyboard tray of the LKM series console drawers (**Figure 4-1**). Use the **Menu/Enter** button to initiate the OSD controls menu or to enter adjusted values for OSD options. Use the **Left** and **Right** buttons to navigate through the OSD menu structure.

Figure 4-1: OSD Control Buttons

NOTE:

Pressing the "Left" key while the OSD control menu is inactive brings up the brightness adjustment menu. Pressing the "Auto" key while the OSD control menu is inactive will automatically adjust the display for optimum view on the LCD screen.

4.1.2 OSD Menu Structure

Table 4-1 shows the OSD menu structure for all models of the LKM series console drawers.

Level 0	Level 1	Level 2	Level 3	Value
Brightness and Contrast Menu	Brightness			0 to 100
	Contrast			0 to 100
	Exit			Return to Main Menu
Color Menu	AutoColor			Auto-adjusts the color
	sRGB			Standard RGB mode
	ColorTemp	User	R	0 to 255
			G	0 to 255
			B	0 to 255
		4200k		Preset NTSC value
		5000k		Preset NTSC value
		6500k		Preset NTSC value
		7500k		Preset NTSC value
		9300k		Preset NTSC value
		Exit		Return to Color Menu
	Exit			Return to Main Menu
Image Menu	AutoAdjust			Auto-adjusts display values
	Width			0 to 100
	Clock Phase			0 to 32
	HPos			0 to 255
	VPos			0 to 255
	Exit			Return to Main Menu
Tools Menu	OSD	OSDTimeOut		0 to 60
		OSDHPos		0 to 255
		OSDVPos		0 to 255
		Exit		Return to Tools Menu
	Factory Reset			Reset all display values to factory settings
	Sharpness			0 to 6
	Overlapped Mode			640/720 Mode change
	Exit			Return to Main Menu

Table 4-1: OSD Menu Structure

4.1.3 Brightness and Contrast Menu

The **Brightness and Contrast** menu is shown in **Figure 4-2**.

Figure 4-2: Brightness and Contrast Menu

- **Brightness**:

  This item sets the brightness of screen, adjusting the offset value of ADC. Setting this value too high or too low will affect the quality of image.

- **Contrast**:

  This item sets the gain value of ADC. Adjusting this value too high or too low will worsen the quality of image.

- **Exit**:

  This item exits the **Brightness and Contrast** menu.

4.1.4 Color Menu

The **Color** menu is shown in **Figure 4-3**.

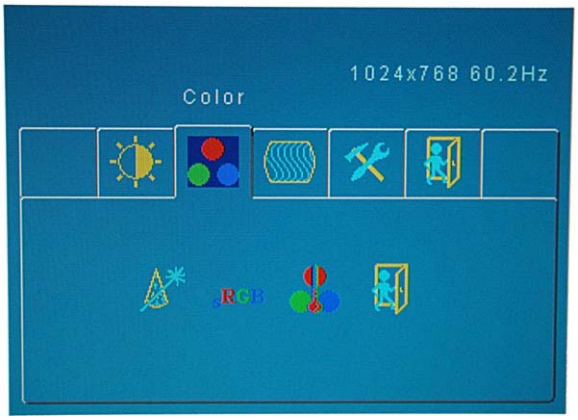

Figure 4-3: Color Menu

The **Color** menu fine-tunes the palette of color hues for the LCD.

- **AutoColor**:

  This item automatically adjusts the color.

- **sRGB**:

  This item sets the color to standard RGB mode.

- **ColorTemp**:

  This enters the **Color Temperature** sub-menu (see **Section 4.1.4.1**).

- **Exit**:

  This item exits the **Color** menu.

4.1.4.1 Color Temperature Sub-Menu

The **Color Temperature** sub-menu is shown in Figure 4-4.

Figure 4-4: Color Temperature Sub-Menu

- **User**:

  This enters the **User** sub-menu (see **Section 4.1.4.2**).

- **4200**:

  This item sets the display color temperature to NTSC standard 4200K.

- **5000**:

  This item sets the display color temperature to NTSC standard 5000K.

- **6500**:

  This item sets the display color temperature to NTSC standard 6500K.

- **7500**:

  This item sets the display color temperature to NTSC standard 7500K.

- **9300**:

  This item sets the display color temperature to NTSC standard 9300K.

4.1.4.2 User Sub-Menu

The **User** sub-menu is shown in Figure 4-5.

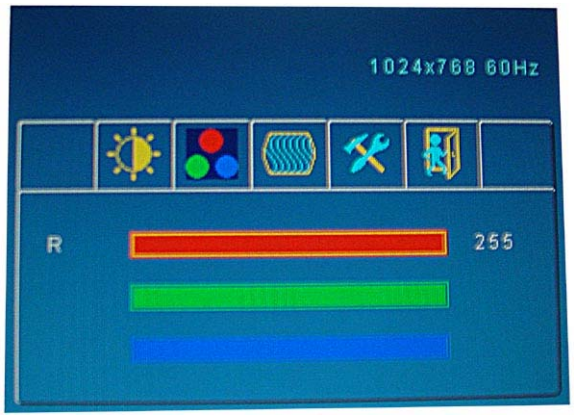

Figure 4-5: User Sub-Menu

- **User**:

  This item adjusts the balance among Red, Green, and Blue color hues if images look garish or unrealistic.

4.1.5 Image Menu

The **Image** menu is shown in Figure 4-6.

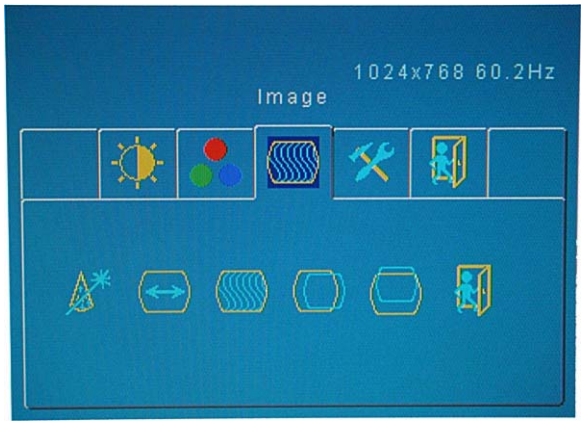

Figure 4-6: Image Menu

The **Image** menu adjusts the screen position options.

- **AutoAdjust**:

  This item automatically adjusts the screen position.

- **Width**:

  This item adjusts the screen size in the horizontal direction.

- **Clock Phase:**

  This item adjusts the input signal and dot clock position (Analog only).

- **HPos:**

  This item adjusts the horizontal position of the display screen.

- **VPos:**

  This item adjusts the vertical position of the display screen.

- **Exit**:

  This item exits the **Image** menu.

4.1.6 Tools Menu

The **Tools** menu is shown in Figure 4-7.

Figure 4-7: Tools Menu

The **Tools** menu has the following options:

- **OSD**:

  This enters the **OSD** sub-menu (see **Section 4.1.6.1**).

- **Factory Reset**:

  This item resets all display values to their factory settings.

- **Sharpness:**

  This item adjusts the sharpness level to preset values. This option may help reducing the softening edges around displayed objects.

- **Overlapped Mode:**

  This item toggles the DOS mode pixel resolution between 640 and 720.

- **Exit**:

  This item exits the **Tools** menu.

4.1.6.1 OSD Sub-Menu

The **OSD** sub-menu is shown in Figure 4-8.

Figure 4-8: OSD Sub-Menu

- **OSDTimeOut**:

  This item adjusts how many seconds the OSD screen stays visible before it disappears when OSD is left unattended.

- **OSDHPos:**

  This item adjusts the horizontal position of the OSD display screen.

- **OSDVPos:**

  This item adjusts the vertical position of the OSD display screen.

- **Exit**:

  This item exits the **OSD** sub-menu.

4.2 LCM Controls

The LCM is used to control the display and switching status of systems connected to the console.

4.2.1 LCM Buttons

There are three LCD module (LCM) control buttons and one LED (Figure 4-9) on the keyboard tray of the LKM series console drawers that have eight port connectors.

Figure 4-9: LCM Control Buttons

- **LED**:

  This item indicates that the LCD is either in Auto Scan mode or Edit mode.

- **AUTO / EDIT**:

  This item initiates an auto-scan sequence for systems connected to the console and can be used to edit station names.

- **UP**:

  This item scrolls up through available stations and options.

- **DOWN**:

  This item scrolls down through available stations and options.

4.2.2 LCM Functions

The following sections describe the LCM functions.

4.2.2.1 Manually Switching Stations

When the LKM series console drawer is initially connected to a power source, "Power On" is displayed on the LCM; afterwards, "Station 001" is displayed indicating that the system connected to station 1 ports is currently active. Use the "UP" and "Down" button to activate control over other stations. The station range is from "station 000" to "station 007".

4.2.2.2 Cycling Through Stations

Press the "AUTO/EDIT" button to activate the automatic switching function. Press the "AUTO/EDIT" button and the console will continuously cycle through all available stations at an interval of 10 seconds. Press the "AUTO/EDIT" button again to stop the cycling sequence.

4.2.2.3 Station Name Editing

The station name editing functions allow users to input the name of each computer station on the LCM. The maximum number of input characters is 16. The following procedure is used as an example of how to add the name "ICP ALPHA SERVER" to "Station 001". Available characters for naming are: A to Z, 0 to 9, space and the following symbols: ! " # $ % & / ( ) * + , - . / = < > ? @ [ ] _

Step 1: Switch to "Station 001" on the LCM (see **Section 4.2.2.1**).

Step 2: Press the "AUTO/EDIT" button for more than 3 seconds, or until a blinking cursor is seen on the LCM, to enter edit mode.

Step 3: Press the "UP" or "DOWN" button until reaching the character "I".

Step 4: Press the "AUTO/EDIT" button to select the "I" character.

Step 5: Press the "UP" or "DOWN" button until reaching the character "C".

Step 6: Press the "AUTO/EDIT" button to select the "C" character.

Step 7: Repeat steps 5 and 6 until "ICP ALPHA SERVER" is written on the LCM.

Step 8: Press the "AUTO/EDIT" button for more than 3 seconds, or until the blinking cursor disappears from the LCM, to exit edit mode.

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Appendix

A

Certifications

A.1 RoHS Compliant

All models in the LKM Series console drawer comply with the Restriction of Hazardous Materials (RoHS) Directive. This means that all components used to build the industrial workstations and the workstation itself are RoHS compliant.

The RoHS Directive bans the placing on the EU market of new electrical and electronic equipment containing more than agreed levels of lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants.

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